ISSUE PAPER

TO: US. Environmental Protection Agency, Region VIII (EPA)
State of Colorado, Colorado Department of Public Health and Environment (CDPHE)

FROM U.S. Department of Energy, Rocky Flats Field Office (DOE)

SUBJECT: Status of Colorado Groundwater Regulations as Potential Applicable or Appropriate and Relevant Standards (ARARs) for the CERCLA Cleanup of the Site

DATE: February 24, 1995

As requested by the U.S. Environmental Protection Agency, Region VIII (EPA) and the state of Colorado, Colorado Department of Public Health and Environment (Colorado), the U.S. Department of Energy (DOE) has prepared this issue paper regarding the general applicability, as this term is used in the Comprehensive Environmental Response Compensation and Liability Act (CERCLA), of Colorado's groundwater regulations to the Rocky Flats Environmental Technology Site (Site).

FACTS

The DOE in conjunction with EPA and Colorado is attempting to reach consensus on which standards and regulations, both Federal and state, are potential Applicable or Relevant and Appropriate Requirements (ARARs) for the CERCLA cleanup of the Site. Colorado maintains that its site-specific regulations, imposed on the Site as part of the Colorado groundwater regulation scheme, are potential ARARs. According to Colorado, its site-specific use classification, associated standards, and site-specific standards are of general applicability because the authority given to the Colorado Water Quality Control Commission (WQCC) to establish such classifications and standards covers the entire state.

A review of the process by which the site-specific standards were applied to the Site shows that a site-specific rulemaking hearing was held in February 1991 at the behest of the city of Westminster. Potential groundwater pollution from the Site entering Woman Creek and then flowing into Standley Lake (Westminster's water supply) was the City's primary concern. The WQCC was requested by DOE and EG & G - Rocky Flats (EG & G) to apply the site-specific standards to the area that includes all groundwater drainage basins in the vicinity of the Site that are tributary to Standley Lake and Great Western Reservoir. This request, however, was rejected by the WQCC in favor of applying them only within Site boundaries. As stated in the "Regulatory Analysis for Ground Water Classifications and Standards Rocky Flats Area":

> Several parties objected to the original specified area which included some land outside of the federally owned Rocky Flats reservation. The Division staff has agreed that it would be appropriate to address this concern by considering only the federal property as the specified area.

January 30, 1991, Section VI.

In addition, the WQCC ignored other requests by DOE and EG & G concerning the imposition of use classifications based on downstream rather than plant uses of ground and surface water as well as imposing unenforceable radionuclide standards.

OVERVIEW OF CERCLA and NCP

Under Section 121(d)(1) of CERCLA (42 U.S.C. Sec. 9621(d)(1)), remedial actions must attain a degree of cleanup of hazardous substances, pollutants and contaminants released into the environment and control of further release that at a minimum assures "protection of human health and the environment." The remedial actions shall be relevant and appropriate under the circumstances presented by the release or threatened release of such substance, pollutant or contaminant.

Rather than starting from scratch, CERCLA referenced the National Contingency Plan (NCP) as a catalyst for CERCLA remedial actions. The NCP was developed by a group of federal agencies prior to the enactment of the National Environmental Policy Act or CERCLA, as a method for dealing with environmental disasters. Under Section 104(a)(1) of CERCLA, the President is authorized to act, consistent with the NCP to arrange for the removal and remediation of hazardous substances, contaminants or other pollutants. Specifically, 40 CFR Sec. 300.1 states that the NCP is to provide the organizational structure and procedures for preparing for and responding to releases of hazardous substances, pollutants and contaminants. The NCP, at 40 CFR Sec. 300.3(b), states that it applies to:

> Procedures for undertaking response actions pursuant to CERCLA;
>
> Procedures for involving state governments in the initiation, development, selection, and implementation of response actions.

Both Federal and state laws form the basis for deriving ARARs. State ARARs include promulgated requirements under state environmental or facility siting laws that are more stringent than Federal ARARs and have been identified to the EPA in a timely manner. In the definitions section, 40 CFR 300.5, "applicable requirements" is defined as :

> those cleanup standards, standards of control, and other substantive requirements, criteria or limitations promulgated under federal environmental or state environmental or facility siting laws that specifically address a hazardous substance, pollutant, contaminant, remedial action, location or other circumstance found at a CERCLA site. Only those state standards that are identified by a state in a timely manner and are more stringent than federal requirements may be applicable.

"Relevant and appropriate requirements" are defined at 40 CFR 300.5 as:

> those cleanup standards, standards of control, and other substantive requirements, criteria or limitations promulgated under federal environmental or state environmental facility siting laws that, while not "applicable" to a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a CERCLA site, address problems or situations sufficiently similar to those encountered at the CERCLA site that their use is well suited to the particular site. Only those state standards that are identified in a timely manner and are more stringent than federal requirements may be relevant and appropriate.

Subsection 121(d) of CERCLA requires that remedies comply with Federal and state substantive requirements that qualify as ARARs unless they are waived.

The goal of EPA's Superfund approach with regard to groundwater, the subject of the potential ARARs sought to be imposed by the state, is to return usable groundwaters to their beneficial uses within a time frame that is reasonable given the particular circumstances of the site. 53 FR 51433. The approach taken is to assess the characteristics of the groundwater in order to decide the level to which the groundwater will be restored; restoration time frame; most appropriate technology or approach for attaining these goals. 53 FR 51433.

Class I groundwaters are comprised of groundwaters that are of high value and high vulnerability to contamination due to the hydrological characteristics of the areas where they occur. Specifically:

> 1. Groundwater is irreplaceable because there are no reasonable alternative drinking water sources available to substantial populations; or
> 2. Groundwater is ecologically vital, providing the base flow for a particularly sensitive ecological system supporting a unique habitat.

53 FR 51433.

Class II groundwaters are all non-Class I groundwaters currently used or potentially available for drinking water or other beneficial uses. Class IIA are currently being used; Class IIB are potential drinking water sources. 53 FR 51433. Class III groundwater are not considered to be potential sources of drinking water and are of limited beneficial use. These are groundwaters that are contaminated beyond levels allowing restoration using methods reasonably employed in public water treatment systems. Class IIIA are groundwaters highly to moderately connected with adjacent water and Class IIIB have a low degree of interconnection. 53 FR 5433.

EPA does note that classifications proposed by EPA's Superfund program do not apply to that geographical area in general, to any other actions that may be undertaken under any other state or Federal program, or to private actions. 53 FR 5433. The approach can be superseded by state classification schemes that are applicable or relevant and appropriate to the response as well as state ARARs that derive from wellhead protection programs. 53 FR 5433.

The identification of applicable or relevant and appropriate requirements are dealt with in 40 CFR 300.400(g). Lead and support agencies must identify requirements applicable to the remedial action contemplated based upon "an objective determination" of whether the requirement specifically addresses a hazardous substance, pollutant, contaminant, remedial action, location or other circumstance found at a CERCLA site. With regard to state standards, only those standards that are promulgated, identified by the state in a timely manner, and are more stringent than their Federal counterparts, can be considered ARARs. 40 CFR 300.400(g)(4). For the purposes of identification and notification of promulgated state standards, the term "promulgated" means the standards are of ***general applicability*** and are legally enforceable (emphasis added). 40 CFR 300.400(g)(4).

The term "general applicability" is not further defined in the CFR. However, 53 FR 51438 explains that the phrase "general applicability" was meant to preclude "consideration of state requirements promulgated specifically for one or more CERCLA sites as potential ARARs. EPA believes that Congress did not intend CERCLA actions to comply with requirements that would not also apply to other similar situations in that State." 53 FR 51438. This was restated at 55 FR 8746 as " 'of general applicability' means that potential state ARARs must be applicable to all remedial situations described in the requirement, not just CERCLA sites."

A review of case law fails to reveal any precedent in applying the "general applicability" definition. In summary, however, for a state standard to be an ARAR it must have been promulgated and identified by the state in a timely manner. CERCLA Section 121(d)(2)(A)(ii). In addition, the standard must be of general applicability and adopted by formal means. Section 121(d)(2)(C)(iii)(I). "Promulgated" is defined at 40 CFR 300.400(g)(4), for the purposes of identification and notification of promulgated state standards, as "standards are of general applicability and are legally enforceable."

As no technical definition has been given to the word "general" it must be accorded its ordinary and plain meaning. *Merriam Webster's Collegiate Dictionary, Tenth Edition,* 1994 defines the word "general" as:

> "1. involving, applicable to, or affecting the whole 2: involving, relating to or applicable to every member of a class, kin or group; 3. not confined by specialization or careful limitation; 4. belonging to the common nature of a group of like individuals."

ANALYSIS

Issue No. 1: Colorado's groundwater regulations, on their face, cannot be generally applicable because they are site-specific and that site-specificity is antithetical to any general application.

The EPA in the NCP Preamble stated that the phrase "general applicability" was meant to preclude "consideration of state requirements promulgated specifically for one or more CERCLA sites as potential ARARs. The EPA believes that Congress did not intend CERCLA

actions to comply with requirements that would not also apply to other similar situations in the State. 53 FR 51438. EPA restated this proposition at 58 FR 8746 as " 'of general applicability' means that potential state ARARs must be applicable to all remedial situations described in the requirement, not just CERCLA sites." Under EPA's rationale, in order to be ARARs, a state standard has to be applicable to all similarly situated CERCLA sites in a state and not just one. Clearly, the Site is subject to site-specific standards that are not applicable to any other CERCLA site in Colorado.

The intent to make these site-specific standards ARARs for CERCLA purposes is seen in comments made at a hearing deliberating the setting of those site-specific standards for the Site. Paul Frohardt representing the WQCC, stated:

> ... these standards, we believe would currently have a role with respect to guiding CERCLA cleanup activities; that these would be relevant and appropriate standards that would be looked to in the CERCLA context, even if they were not currently enforceable in an NPDES permit.

Transcript of Rulemaking Hearing, December 4, 1989, p. 19 lines 18-23. It is clear from these remarks that the WQCC intended to create site-specific CERCLA cleanup criteria. Such an action is clearly impermissible under the NCP Preamble as stated at 58 FR 8746.

Use of a common definition of the term "general" also negates the imposition of Colorado's site-specific standards as being generally applicable. As referenced earlier, *Merriam Webster's Collegiate Dictionary, Tenth Ed.*, 1994, defines the word general as:

> 1. involving, applicable to or affecting the whole; 2. involving, relating to or applicable to every member of a class, kin or group; 3. not confined by specialization or careful limitation; 4. belonging to the common nature of a group of like individuals."

It is quickly apparent that a site-specific standard is not applicable to the whole, or applicable to every member of a class, but instead is confined by specialization or careful limitation. Therefore, use of the common definition of the term "general" precludes imposition of site-specific regulations as ARARs under CERCLA.

Issue No. 2: The site-specific regulations set by Colorado were not promulgated properly because the WQCC ignored its own standards in setting both the use classification and affected area boundaries.

By its own regulations, the WQCC in setting the specified area, must consider:

> 1. When an activity exists ... the shape, depth, boundaries and extent of a specified area shall be determined by considering:

a. the presence, extent and nature of existing uses of groundwater that may be affected by the activity, and the nature of reasonably expected future uses of groundwater that may be affected by the activity; and

b. the nature and location of the activity and its discharge; and

c. existing groundwater quality that may be affected by the activity; and

d. relevant geologic and hydrogeologic conditions, including but not limited to the presence of groundwater hydrologically connected to surface waters and recharge areas.

5 CCR 1002-8, Section 3.11.4 (C).

This section does not reference plant boundaries as one of the criteria to be considered in setting the boundaries of a specified groundwater area. Instead, the driver for setting area boundaries is the groundwater that is to be protected. The operative facts regarding the Site are:

1. no groundwater is presently being used for any purpose within the Site;

2. there are no plans to develop groundwater in the future for any use within the Site;

3. existing studies show that there is only limited availability of groundwater under the Site; and

4. the Site is no longer an active production facility but instead is in varying stages of CERCLA cleanup thereby bringing into question the validity of the "activity" considered by WQCC.

In addition, in applying groundwater classifications to a specified area the following criteria is to be used:

1. Groundwater within a specified area shall be classified "Domestic Use-Quality" when:

a. Groundwater is used for domestic use within the specified area; or

b. If groundwater is not currently used for domestic use within the specified area, the available information, including information regarding background levels, demonstrates that future use of water within the specified area is reasonably probable; or

c. The most recent State Engineer's well records or applicable water court decrees reveal that groundwater is permitted or decreed for domestic use within the specified area, unless other information demonstrates that domestic use is not being made of the groundwater and is not likely to be made; or

...

5 CCR 1002-8, Section 3.11.4(B).

Again, based on existing knowledge of the Site:

1. Groundwater is not being used for domestic use within the specified area.

2. It is unlikely that groundwater, due to limited supply, will be used for domestic use in the future.

3. Review of State Engineer's records or water court decrees do not reveal any permits for use of groundwater for domestic use within the Site.

The WQCC can classify groundwater as "Agricultural Use - Quality" when:

> a. Groundwater is used for agricultural use within the specified area; or
>
> b. If groundwater is not being used for agricultural use within the specified area, the available information, including information regarding background levels, demonstrates that future agricultural use of water within the specified are is reasonably probable; or
>
> c. The most recent State Engineer's well records or applicable water court decrees reveals that groundwater is permitted or decreed for agricultural use within the specified area, unless other information demonstrates that agricultural use is not being made of the groundwater and is not likely to be made; or
>
> ...

5 CCR 1002-8, Section 3.11.4 (B)(2).

At present, no groundwater on the Site is being used for agriculture and there are no decrees awarding groundwater for agricultural use in the State Engineer's or water court files.

Under Colorado regulations, groundwater within a "specified area" is to be classified Surface Water Quality Protection when:

> A proposed or existing activity does or will impact groundwaters such that water quality standards of classified surface water bodies within the specified area will be exceeded.

5 CCR 1002-8, Section 3.11.4(B)(3).

In order for this classification to be applied, a hydrological connection must exist between groundwater and surface water. This is a factual question, but there is evidence that some of the groundwater daylights and enters surface water within the Site. But, the question raised by the regulation is whether a classified surface water body ***within the Site*** will be adversely affected (emphasis added). Furthermore, any rulemaking must be conducted in accordance with constitutuional considerations of fundamental fairness. There is some indication in the record of the July 10, 1989 Rulemaking Hearing that certain political considerations were part of the decision-making process. Accordingly, the reclassification should be scrutinized to determine whether it is supportable independent of any political considerations.

It should be noted that EPA's approach to groundwater is to classify them by use and only impose that layer of cleanup that corresponds to the value of that groundwater for that use. 53 FR 51433. In this case, the groundwater under the Site is not used for either domestic or agricultural use. Accordingly, the level of cleanup should not be linked to Colorado's domestic or agricultural use classifications. Although EPA recognizes that a state can take a more strict approach, EPA's groundwater restoration guidelines require that the cleanup be related to existing or future uses of the groundwater. Based on the facts surrounding existing and future uses of groundwater at the Site, it would be unreasonable to impose a cleanup grounded on unreasonable speculation concerning use of Site groundwater.

Issue No. 3: In setting the site boundaries and the use classifications, WQCC added an "extra layer of protection" for the drinking water supplies of the municipalities that requested the rulemaking.

As stated by Paul Frohardt on December 4, 1989:

> ... the reason for the proposal of domestic water supply classification for those segments. It's an extra layer of protection for the use that does occur in Standley -- we believe could occur for Great Western -- immediately downstream, urging, as a policy matter, that the commission should provide that extra layer of protection with this set of circumstances.

Transcript, p. 33, lines 8-15.

In responding to questions from the Chairman of the WQCC concerning the rationale behind the imposition of aquatic life protection standards, Frohardt replied:

> That would be an additional layer of protection. That element of the proposal was not in the division's original proposal. It was urged by one of the other parties. We indicated that we would agree with that, and, again, it's admittedly a policy judgment for this commission, where you draw a line on the extra layers of protection. In the division's initial proposal we drew it between those things that go to protecting public health versus those things that go to protecting aquatic life. At the urging of the other parties we agreed that we would support a proposal to provide the extra layer of protection in each of those instances.

Transcript, p. 34, lines 1-14.

However, DOE through the expenditure of $110 million has reengineered those drinking water supplies and the cities water supplies will no longer be exposed to Site effluent. As a result, there is no further need for the extra layer of protection that these site-specific standards represent, and the cities are expected to join with DOE in asking for their removal. In addition, this extra layer of protection was based on data that existed in 1989. Additional data has been developed in the interim that will support removal of the site-specific standards.

Issue No. 4: The WQCC improperly imposed state radiological protection standards on the Site despite U.S. Supreme Court precedent establishing Federal preemption of that field.

As stated by Paul Frohardt on December 4, 1989:

> Finally, the third major are the DOE opposes is the adoption of radionuclide standards by this commission. ... There is an issue that DOE has identified, accurately, I believe regarding where and how such standards can be enforced. ... I think this commission serves an important policy-making role and informational role that can and should be served, even if we felt that those standards were not enforceable and never would be enforceable.

Transcript, pp. 18-19. This indicates that WQCC knew it was imposing unenforceable standards as a policy matter.

The WQCC knew of DOE's primacy in the regulation of discharges of source, special nuclear and by-product materials because DOE in written statements to WQCC referenced the decision of the U.S. Supreme Court in *Train v. Colorado Public Interest Research Group, Inc.*, 426 U.S. 1 (1976). The Court, in *Train* stated that under the Atomic Energy Act, the Atomic Energy Commission is "authorized to establish 'such standards ... as [it] may deem necessary or desirable ... to protect health or to minimize danger to life or property." [citations omitted]. *at* 7. This is a clear articulation by the High Court that DOE has the exclusive authority to regulate releases of source, special nuclear and by-product material from its facilities. This was communicated to WQCC. The WQCC, however, ignored the precedent in favor of an unenforceable, non-binding, policy decision. Furthermore, CERCLA itself defines "federally permitted releases" as any release of source, special nuclear, or byproduct material ... in compliance with a legally enforceable license, permit regulation, or order issued pursuant to the Atomic Energy Act. Section 101(10)(K). 42 U.S.C. Sec. 9601(10)(K). Arguably, any release of source, special nuclear, or byproduct material from the Site in conformity with the Atomic Energy Act is a federally permitted release under CERCLA.

Issue No. 5: Under the NCP Preamble, the burden is on Colorado to prove that site-specific requirements are of general applicability, are legally enforceable and meet other prerequisites for being a potential ARAR.

As stated at 55 FR 8746:

> If a question is raised as to whether a requirement identified by a state conforms to the requirements for being a potential state ARAR, or is challenged on the basis that it does not conform to the definition, the state would have the burden of providing additional evidence to EPA to demonstrate that the requirement is of general applicability, is legally enforceable, and meets the other prerequisites for being a potential ARAR.

The DOE, as lead agency under Executive Order 12580 for CERCLA response actions at the Site, has raised serious doubts as to the ARAR status of Colorado's site-specific requirements. Consequently, the burden of going forward is on Colorado to produce a justification that is legally and factually credible for its claim that the site-specific requirements are ARARs.

CONCLUSION

1. A site-specific regulation cannot be of "general applicability" because imposition of requirements on a site-specific basis, cannot meet the definition of the word "general." Colorado's oft-repeated argument that a site-specific standard can be ARARs because it was imposed through a state-wide process, cannot overcome the fact that the "general" process for setting site-specific standards negates the "general applicability" of the standards set by that process.

2. In order to be generally applicable, a standard must have been promulgated. However, a review of the promulgation of the site-specific standards shows that Colorado failed to follow its own regulations regarding the selection of both site boundaries and proper use classification of the waters found at the Site. As a result those regulations are not enforceable.

3. Review of the rulemaking record shows that the site-specific standards were imposed as an extra layer of protection for municipal water supplies associated with the Great Western Reservoir and Standly Lake. As a result of the expenditure of $110 million in DOE funds, those drinking water supplies are no longer affected and it is anticipated that the petitioning cities will join DOE in requesting that the site-specific regulations be removed. Additionally, the site-specific standards were set by reference to the data available in 1989, and data subsequently developed since then will independently support removal of the site-specific regulations.

4. There is some indication that certain polical considerations played a part in the deliberations of the WQCC Rulemaking Hearings and the decision making process. Despite clear legal precedent establishing Federal preemption of the field of regulating source, special nuclear material, and byproduct material, the WQCC as a "policy" matter chose to impose radionuclide standards on the Site. This unenforceable "extra layer of protection" cannot rise to the level of CERCLA based ARARs. Colorado cannot go through the backdoor when it is barred from going through the front door in setting regulations.

5. Finally, Colorado bears the ultimate burden of proving that its site-specific regulations meet all the definitions of ARARs once a question is raised concerning the ARAR status. The DOE is raising these valid arguments against the site-specific standards. Accordingly, Colorado must meet its burden of proving the ARAR status of those site-specific regulations.